

Agricultural Farming Crops and Livestocks

Agriculture is the backbone of India's economy. The history of agriculture dates back to several centuries. Since time immemorial, crops and plants were grown and domesticated by the people, in several parts of the world. Plants which are fully useful for human and animal consumption have been segregated and cultivated in farms and fields.

Livestock farming, raising of animals for use or for pleasure. The discussion of livestock includes both beef and dairy cattle, pigs, sheep, goats, horses, mules, asses, buffalo, and camels; the raising of birds commercially for meat or eggs (i.e., chickens, turkeys, ducks, geese, guinea fowl, and squabs) is treated separately. For further information on dairy cattle breeds, feeding and management, see dairying. For a discussion of the food value and processing of meat products, see the article meat processing. For a further discussion of breeds of horses, see the article horse: Breeds of horses.

Major Food Crops in Agriculture

RICE:

India is an important center of rice cultivation. Rice is the major crop which is grown by many of the farmers in India. The Rice crop needs a hot and humid climate. It is best suited to regions that have high humidity, prolonged sunshine, and an assured supply of water. The rice crop also said to be paddy crop. Generally, the time period for the cultivation of this crop is within the range of 100-210 days or 6 months. It can be cultivated in a various types of soils, but it finds for soil that meets with more requirements of water, fertility. The primary suitable soils for rice crop are clay soil, black soil, loamy soil etc.... The time for rice plantation starts in May-June and ends in October-November in the year. In some places the rice cultivation will takes place for 2 times in a year.

The stages in rice cultivation life Cycle:

- Seed selection and germination
- Transplanting or Direct seeding
- Vegetative growth
- Weeding
- Grain development
- Harvesting
- Threshing
- Winnowing
- Storage

The common diseases, symptoms and treatment for rice crops are Brown Spot of rice which is caused by fungus called "Helminthosporium oryzae", which shows small sesame shaped

round or oval brown spots are formed on the leaves and it is prevented by spraying Dithane M-5 (0-2%) or Dithane Z-78 (0-25%) solution to control the Disease.

Leaf Blast is the common disease which contains First small specks are formed on the leaves, later these specks enlarge and appear on the leaves as a spindle or eye shape (0.5 to 1.5cm length, 0.3 to 0.5cm width). The edges of these spots are brown in color and the middle part is gray in color. Later, many spots coalesce and form large irregularly shaped spots on the leaves, due to which the leaves get scorched and dry up which is prevented by using chemicals i.e Carbendazim 50 wp @500g or Tricyclazole 75 wp @500g or Metominostrobin 20 sc @500ml or Azoxystrobin 25 sc @500ml.

Tungro is a common disease which is caused by viruses called *Rice tungro bacilliform virus (RTBV)* and *Rice tungro spherical virus (RTSV)*. In paddy, this disease is transmitted by leafhoppers which leads the growth of the plants affected by the disease is stunted and tillerings are also reduced and older leaves begin to turn orange-yellow at the tips and extend down to the lower leaf portion. This disease is prevented by spraying Thiamethoxam 25 100g or Imidacloprid 17.8 100mk at 15 and 30 days after transplanting of paddy and also spray insecticide on the weeds of bunds as well.

Bacterial leaf blight is a common disease in paddy which is a bacterial disease caused by *Xanthomonas oryzae pv. oryzae*. This disease can occur at any time from the seedling stage to the mature stage of the plants. In this disease, long dry lesions begin to form from the tip of the leaf and move towards the central part of the leaf through the edge. Wavy spots appear on the edges of the leaves. In case of severe infestation of the disease, the entire leaf dries up. To prevent this disease water should be drained from the field when symptoms of the disease appear and use a balanced amount of fertilizers. If the crop shows signs of disease, apply less amount of nitrogen fertilizers. For the control of bacterial leaf blight, spray 75 grams of 'Agrimycin-100' and 500 grams of copper oxychloride in 700-800 liters of water per hectare. If 'Agrimycin-100' is not available, 100 g streptomycin can be used instead.

Sheath blight is a common disease in rice which is caused by a fungus called *Rhizoctonia solani*. The symptoms of this disease start appearing from the paddy nursery. After planting in the field, the symptoms of the disease appear at the last stage of tillering. In this disease, irregularly shaped spots are formed on the leaf sheath just above the ground or water surface. These spots are 2-3 cm long, green to brown in color, which later become straw colored (pale yellow color). Purple stripes are formed around the spots. If the crop shows signs of disease, spray 1 kg Carbendazim or 1 liter Hexaconazole in 600-700 liters of water per hectare.

WHEAT:

Wheat is the main cereal crop in India. Indian wheat is largely a soft/medium-hard, medium protein, white bread wheat, somewhat similar to U.S. hard white wheat. Wheat grown in central and western India is typically hard, with high protein and high gluten content. India also produces around 1.0-1.2 million tons of durum wheat, mostly in the state of Madhya Pradesh. Most Indian durum is not marketed separately due to segregation problems in the market yards. The Government of India appointed a commission in 1961 to assess the feasibility of increasing

crop productivity under prevailing Indian ecological conditions. As a result of various steps taken by Govt. of India, the Wheat scenario in our country has completely changed. At present, the country is producing much more excess Wheat than the requirement. The best wheat is produced in areas favored with cool, moist weather during the major portion of the growing period followed by dry, warm weather to enable the grain to ripen properly. Loamy land is best for wheat cultivation. Wheat is also cultivated in clay and sandy lands. Wheat can be successfully cultivated on all those lands whose pH value is between 5.5 to 7.5. 1st fortnight of November is the best time for wheat sowing. The time period for wheat cultivation is range from 7-8 months.

Different methods of sowing wheat are as follows:

- Behind the plough method
- Drilling
- Broadcasting method
- Dibbling
- FIRB method

The common diseases in wheat crop are Leaf Rust, Stripe Rust, Powdery Mildew, Septoria Leaf Blotch. The commonly fertilizers to use for wheat crop are Nitrogen(N) 120kg/ha, Potassium(K) 40kg/ha, Micronutrients, Sulfur(S), Phosphorus(P) 60kg/ha.

Mostly the wheat crops cultivate in Northern states in India.

MILLETS:

Given the nutritional value of the millets, the Government has notified millets as Nutri-cereals in April 2018. Millets are a rich source of Protein, Fibre, Minerals, Iron, and Calcium and have a low glycemic index. The National Year of Millets was celebrated in 2018. Millets require a temperature between 27-32°C. Rainfall is around 50-100 cm. Millets can be grown in inferior alluvial or loamy soil because they are less sensitive to soil deficiencies.

Jowar is a rain-fed crop grown in moist areas with less or no irrigation.

Bajra grows in sandy soils and shallow black soil.

Ragi requires red, black, sandy, loamy, and shallow black soils which are found in dry regions mostly.

These are the small-seeded hardy crops that can grow well in dry zones or rain-fed areas under marginal conditions of soil fertility and moisture.

Millets are cultivated in low-fertile land, tribal and rain-fed, and mountainous areas. These areas include Haryana, Uttar Pradesh, Chhattisgarh, Gujarat, Rajasthan, Madhya Pradesh, Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu, and Telangana.

Due to their short growing season, millets can develop from seeds to ready-to-harvest crops in just about 65 days. Millets can not only grow in poor climatic or soil conditions and provide nutritious grain as well as fodder, but these can also very well fit into multiple cropping systems under irrigation as well as dryland farming due to their short growing season.

The common diseases in millets are Downy Mildew which is a fungal disease, causing yellow or brown marks on leaves and to prevent using rich potassium as a fertilizer to it.

Rusts is a common disease which is caused by fungal pathogens and can affect millet crops which leads to reddish or brown pustules on leaves and stems. To prevent this disease using a balanced nitrogen as a fertilizer.

Head smut is a common disease which causes a black spores on the plants. Using proper soil fertility and including balanced nitrogen can reduce the risk of head smut in millet crops.

Bacterial Leaf Streak is a common disease which is a bacterial disease that causes elongated lesions on leaves and reducing photosynthetic efficiency. Copper-based fertilizers which can help to prevent the bacterial diseases.

PULSES:

Several pulse crops are grown in India and the world. Among the crops, major ones are Gram, Pigeon pea, Lentil, Field peas, etc. According to history, the origin of Gram is in South West Asia – probably Afghanistan and Persia, Pigeon pea in Africa, Lentil in Turkey to South Iran, and Field peas in Mediterranean Region of Southern Europe and Western Asia. Pulses are consumed as Dal, which is a cheap source of plant protein. These are consumed because of bodybuilding properties having the presence of various amino acids. These also have medicinal properties. By-products of pulses like leaves, pod coats, and bran are given to animals in the form of dry fodder.

Some pulse crops like Gram, Lobia, Urdbean & Moongbean are fed to animals as green fodder. Moong plants are also used as a green manure which improves soil health and adds nutrients to the soil.

Pulse crops are cultivated in the Kharif, Rabi, and Zaid seasons of the Agricultural year.

Rabi crops require a mild cold climate during the sowing period, during vegetative to pod development cold climate, and during maturity/harvesting warm climate.

Kharif pulse crops require a warm climate throughout their life from sowing to harvesting. Summer pulses are habitants of a warm climate. Seed is required to pass many stages to produce seed like germination, seedling, vegetative, flowering, fruit setting, pod development, and grain maturity/harvesting. The time period for pulses crops to grow within two to four weeks. They are packed with nutrients and have a high protein content.

MAIZE:

Maize (*Zea mays* L) is one of the most versatile emerging crops having wider adaptability under varied agro-climatic conditions. Globally, maize is known as the queen of cereals because it has the highest genetic yield potential among the cereals.

Maize in India contributes nearly 9 % to the national food basket. In addition to staple food for human being and quality feed for animals, maize serves as a basic raw material as an ingredient in thousands of industrial products that includes starch, oil, protein, alcoholic beverages, food sweeteners, pharmaceutical, cosmetic, film, textile, gum, package and paper industries, etc.

In India, maize is traditionally grown in the monsoon (Kharif) season, which is accompanied by high temperature (<35° C) and rainfall.

Maize can be grown successfully in a variety of soils ranging from loamy sand to clay loam.

Soils with good organic matter content having high water holding capacity with neutral pH are considered good for higher productivity.

Being a sensitive crop to moisture stress particularly excess soil moisture and salinity stresses; it is desirable to avoid low lying fields having poor drainage and also the field having higher salinity. Therefore, the fields having provision of proper drainage should be selected for the cultivation of maize. Maize can be grown as a single crop in a year or 2-3 crops in the same year because both short and long duration varieties of the crops are available. In areas where maize is grown as a mixed crop, crops that are of short variety are grown between the tall maize plants.

The major diseases for maize crops are:

Bacterial Stalk Rot which causes the basal internodes develop soft rot and give a water soaked appearance. A mild sweet fermenting odour accompanies such rotting. To prevent this disease use the disease resistance varieties, i.e. Hybrids Ganga Safed-2, DHM 103, show significantly less disease incidence than other hybrids, Avoid waterlogging and poor drainage.

Black Bundle Disease and Late Wilt is the disease kills the plant prematurely after flowering. Infected plants do not show symptoms until they reach to tasseling. To prevent this disease usage of resistant varieties like Ganga Safed 2, Crop sanitation, crop rotations, Avoiding water stress at flowering, Seed treatment with Thiram or Captan 3g/kg seed.

Charcoal-Rot which shows the characteristic symptoms of the disease become apparent as the plants approach maturity. The disease generally appears early after flowering. Plants affected by *M. phaseolina* show evidence of pre-mature ripening. The out sides of lower internodes become straw coloured. The pith becomes badly disintegrated. The infected stalks may split longitudinally into a mass of fibres. The Control measures are Regular irrigations particularly during flowering time should be provided, Use resistant varieties like DHM 103, Ganga Safed - 2 and avoid sowing of susceptible varieties like DHM 105, Seed treatment with Carbendazim or Thiram 3g/kg seed is effective, Field sanitation, crop rotation should be followed.

SUGARCANE:

Sugarcane (*Saccharum officinarum*) family Gramineae (Poaceae) is a widely grown crop in India. It employs over a million people directly or indirectly besides contributing significantly to the national exchequer.

Sugarcane growing countries of the world lay between the latitude 36.7° north and 31.0° south of the equator extending from tropical to subtropical zones. Sugar cane originated in New Guinea where it has been known for thousands of years.

Sugar cane plants spread along human migration routes to Asia and the Indian subcontinent. Here it cross-bred with some wild sugar cane relatives to produce the commercial sugar cane we know today. The time period it takes to grow from 12 to 18 months

Important regions/ zones for sugarcane cultivation in India:

Broadly there are two distinct agro-climatic regions of sugarcane cultivation in India, viz., tropical and subtropical. However, five agro-climatic zones have been identified mainly for varietal development. They are (i) North Western Zone (ii) North Central Zone (iii) North Eastern Zone (iv) Peninsular Zone (v) Coastal Zone.

Tropical Sugarcane region:

The tropical sugarcane region consists of sugarcane agro-climatic zone 4 (peninsular zone) and 5 (Coastal zone) which includes the states of Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka, Gujarat, Madhya Pradesh, Goa, Pondicherry, and Kerala.

Sub-tropical sugarcane region: Around 55 percent of the total cane area in the country is in the sub-tropics. U.P, Bihar, Haryana, and Punjab come under this region.

Crop distribution: Sugarcane growing countries of the world are lying between the latitude 36.70 north and 31.00 south of the equator extending from tropical to sub-tropical zones. In India sugarcane is cultivated all over the country from latitude 80 N to 330 N, except in cold hilly areas like Kashmir valley, Himachal Pradesh and Arunachal Pradesh.

The sugarcane productivity and juice quality are profoundly influenced by weather conditions prevailing during the various crop-growth sub-periods.

Sugar recovery is highest when the weather is dry with low humidity; bright sunshine hours, cooler nights with wide diurnal variations, and very little rainfall during the ripening period.

These conditions favor high sugar accumulation. The climatic conditions like very high temperatures or very low temperatures deteriorate the juice quality and thus affecting the sugar quality. Favorable climates like warm and humid climates favor the insect pests and diseases, which cause much damage to the quality and yield of its juice and finally sucrose contents.

COTTON:

India is believed to be the original home of the cotton plant. India lost a large proportion of cotton growing area to Pakistan during partition. However, its acreage has increased considerably during the last 50 years. Now, Cotton occupies about 4.7 per cent of the total cropped area in the country. Hard-

frost is injurious to cotton cultivation and it requires at least 210 frost-free days. Only light-rainfall (50 to 100 centimetres) is preferred. Cotton can also be cultivated under irrigated conditions. It requires high temperature and bright sunshine for its growth. Cotton requires a clear sky during the flowering stage. A light well-drained soil capable of retaining moisture is ideally suited for the cultivation of the crop. Black cotton soil is preferred. It is a Kharif crop and requires 6 to 8 months to mature.

There are three cotton-growing areas in India – (1) parts of Punjab, Haryana and northern Rajasthan in the north-west, (2) Gujarat and Maharashtra in the west and (3) plateaus of Telengana, Andhra Pradesh, Karnataka and Tamil Nadu in the south.

Leading producers of this crop are Gujarat, Maharashtra and Telangana.

Madhya Pradesh, Karnataka, Andhra Pradesh, Tamil Nadu, Punjab, Haryana and Uttar Pradesh are also significant cotton producers.

Per hectare output of cotton is high under irrigated conditions in the north-western region of the country. Its yield is very low in Maharashtra where it is grown under rainfed conditions.

The common diseases in cotton:

Bacterial blight or Angular leaf spot or Black arm which is the bacterium attacks at all stages from seed to harvest. There are 5 phases of symptoms are noticed through this disease i.e Seedling blight, Angular leaf spot, Vein blight or vein necrosis or black vein, Black arm, Square rot / Boll rot. To prevent this disease Remove and destroy the infected plant debris, Follow crop rotation with non-host crops, Grow resistant varieties like HG-9, BJA 592, G-27, Sujatha, 1412 and CRH 71, Suvin is tolerant, Delint the cotton seeds with concentrated sulfuric acid at 125 mL/kg of seed, Treat the delinted seeds with Carboxin at 2 g/kg seed or soak the seeds in 1000 ppm, Streptomycin sulfate overnight or treat the seed with hot water at 52-56°C for 10-15 minutes, Spray with Streptomycin sulfate (Agrimycin 100), 500 ppm along with Copper Oxchloride at 0.3%.

Fusarium wilt is the disease which affects the crop at all stages. The earliest symptoms appear on theseedlings in the cotyledons, which turn yellow and then brown. The base of the petiole shows a brown ring, followed by wilting and drying of the seedlings. To prevent this disease Treat the acid-delinted seeds with Carboxin or Chlorothalonil at 4 g/kg or Carbendazim @ 2 g/kg seed, Remove and burn the infected plant debris in the soil after deep summer ploughing, Multiply Trichoderma viride(2 kg) in 50 kg of farmyard manure for 15 days and then apply to the soil, Grow disease-resistant varieties of G. hirsutum and G. barbadense.

Verticillium wilt is the disease in which the symptoms are seen when the crop is in squares and bolls. Plants infected at early stages are severely stunted. The first symptoms can be seen as distinct mottling of leaves with pale yellowish irregular areas at the margins and between the principal veins. The yellowish areas become pale, more whitish and extensively necrotic. To prevent this disease Treat the delinted seeds with Carboxin @ 4 g/kg or Carbendazim at 2 g/kg, Apply heavy doses of farmyard manure or compost at 10 t/ha, Grow disease-resistant varieties like Sujatha, Suvin and CBS 156.

Based on homogeneity and commonness, major crop regions in India may be divided as follows:

Rice Region

Wheat Region

Jowar-Bajra Region

Cotton Region

Millet and Maize Region

Fruit and Spice Region

Based on combinations of crops grown following cropping systems exist in India:

Monocropping: Monocropping is when the field is used to grow only one crop season after season. This is harmful to soil health.

Crop Rotation: Crop Rotation means changing the type of crops grown in the field each season or each year (or changing from crops to fallow). Crop rotation improves the soil structure and fertility, and because it helps control weeds, pests, and diseases.

Sequential Cropping: Sequential Cropping involves growing two crops in the same field, one after the other in the same year.

Intercropping: Intercropping means growing two or more crops in the same field at the same time.

Mixed Intercropping: Planting the main crop in rows and then spreading the seeds of the intercrop (such as a cover crop) in between is called mixed intercropping.

Row Intercropping: Planting both the main crop and the intercrop in rows. The rows make weeding and harvesting easier than with mixed intercropping.

Stir Cropping: Stir Cropping involves planting broad strips of several crops in the field.

Changing cropping patterns in India

A cropping pattern is a dynamic concept as it changes over space and time which occurs due to an increase in the prices of crops.

Green Revolution also led to changes in the cropping patterns. Rice was introduced to Punjab, Haryana, and Uttar Pradesh.

New technologies in Indian agriculture play a vital role in determining the cultivation of crops.

Farmers have changed their crop patterns to reap the benefits of economic expansion due to which they are intensively moving towards the cultivation of cash crops from traditional crops.

Population explosion and urbanization have led to land conversion, boosting intensive farming, and have brought changes in cropping patterns.

Cropping patterns may also be influenced by government action undertaken in the form of an administrative and legislative measures. Supply of inputs by the government, intensive schemes for various crops, various government campaigns, transportation, and marketing provisions also influence the cropping pattern in the country.

Livestock Farming

Livestock farming, raising of animals for use or for pleasure. In this article, the discussion of livestock includes both beef and dairy cattle, pigs, sheep, goats, horses, mules, asses, buffalo, and camels; the raising of birds commercially for meat or eggs (i.e., chickens, turkeys, ducks, geese, guinea fowl, and squabs) is treated separately. For further information on dairy cattle breeds, feeding and management, see dairying. For a discussion of the food value and processing of meat products, see the article meat processing. For a further discussion of breeds of horses, see the article horse: Breeds of horses.

An efficient and prosperous animal agriculture historically has been the mark of a strong, well-developed nation. Such an agriculture permits a nation to store large quantities of grains and other foodstuffs in concentrated form to be utilized to raise animals for human consumption during such emergencies as war or natural calamity. Furthermore, meat has long been known for its high nutritive value, producing stronger, healthier people.

Ruminant (cud-chewing) animals such as cattle, sheep, and goats convert large quantities of pasture forage, harvested roughage, or by-product feeds, as well as nonprotein nitrogen such as urea, into meat, milk, and wool. Ruminants are therefore extremely important; more than 60 percent of the world's farmland is in meadows and pasture. Poultry also convert feed efficiently into protein; chickens, especially, are unexcelled in meat and egg production. Milk is one of the most complete and oldest known animal foods. Cows were milked as early as 9000 BCE. Hippocrates, the Greek physician, recommended milk as a medicine in the 5th century BCE. Sanskrit writings from ancient India refer to milk as one of the most essential human foods.

CATTLE

Sheeps:

Sheep are able to subsist on sparse forage and limited water. Their wool is light in relation to its value and is relatively imperishable, both of which qualities enable wide exportation. During the 20th century, sheep-raising in some areas, particularly the western United States, has declined in favour of more profitable cattle.

The gestation period for sheep is 147 days with 16.7 days between periods of estrus, which last 29 hours. The average number of lambs raised per hundred ewes is 91, and the average fleece weight per shearing is 8.34 pounds (3.78 kilograms).

Sheeps are used for various purposes for farmers in livestock operations:

1. **Wool Production:** Sheep are primarily bred for their wool, which is used in various industries, including textile and garment production. Wool is a valuable commodity, and sheep farming provides an income source for many farmers.
2. **Meat Production:** Sheep meat, known as lamb or mutton depending on the age of the animal, is consumed worldwide. Sheep farming provides a significant source of protein for human consumption, and different breeds of sheep are bred specifically for meat production.
3. **Land Management:** Sheep are excellent grazers and can efficiently convert grass and other forage into meat and wool. Farmers often use sheep to manage pasture land by grazing in rotational patterns, which helps control weed growth and maintain the health of the pasture.

4. **Manure Production:** Sheep manure is a valuable organic fertilizer. It enriches the soil with nutrients and improves its structure, contributing to better crop yields in mixed farming systems.

5. **Sustainability:** Sheep farming can be relatively sustainable compared to some other forms of agriculture. Sheep are ruminants, meaning they can digest fibrous plant material efficiently, which reduces the need for processed feeds. Additionally, their grazing behaviors can contribute to ecosystem health when managed properly.

6. **Cultural Importance:** Sheep farming has deep cultural significance in many regions of the world. It is often tied to traditions, festivals, and rural lifestyles, contributing to the preservation of cultural heritage.

Goats:

Probably first domesticated in the East, perhaps during prehistoric times, the goat has long been used as a source of milk, cheese, mohair, and meat. Its skin has been valued as a source for leather. In China, Great Britain, Europe, and North America, the goat is primarily a milk producer. By good management its limited (six months per year) breeding season and the consequent difficulty of maintaining a level supply of milk throughout the year, can be overcome. The goat is especially adapted to small-scale production of milk for the family table; one or two goats supply sufficient milk for a family throughout the year and can be maintained economically in quarters where it would not be practical to keep a cow.

Goats are used for various purposes for farmers in livestock operations:

1. **Meat Production:** Goats are commonly raised for meat, providing a source of protein for human consumption. They are efficient converters of plant material into high-quality meat, making them a valuable livestock option for meat production.

2. **Milk Production:** Dairy goats produce milk that is rich in nutrients and can be used to make various dairy products such as cheese, yogurt, and soap. Goat milk is also easier to digest for some people compared to cow milk, making it an attractive option for those with lactose intolerance.

3. **Land Management:** Goats are natural browsers and are adept at clearing brush, weeds, and unwanted vegetation. Farmers can use goats to help manage overgrown areas, reducing the need for mechanical equipment or herbicides. This practice, known as targeted grazing or conservation grazing, can be particularly useful in areas where machinery cannot easily access or in environmentally sensitive areas.

4. **Fiber Production:** Certain breeds of goats, such as Angora and Cashmere goats, produce high-quality fibers that can be used for textiles. Angora goats produce mohair, while Cashmere goats produce cashmere wool. These fibers are in demand for making luxurious fabrics and garments.

5. **Manure Production:** Goat manure is a valuable organic fertilizer that can improve soil fertility and structure. It can be composted and used to enrich garden soil or fertilize crops, reducing the need for synthetic fertilizers.

Buffaloes:

In India, Dairy farming is one of the best and profitable business which provides the rural employment. When it comes to buffalo population, India has 55% of world buffalo population. As population growing day by day, it is essential to bring the best quality put from dairy farming. Usually buffaloes have multiple advantages when compared to cross bred cows. As milk production is generating huge profits, even educated individuals along with other firms are getting into this business. Murrah buffalo is the most preferred choice of many dairy farmers in Indian dairy farm business. Murrah breed is also known as "Delhi", "Kundi" and "Kali". Pure-bred Murrah buffaloes are found in Punjab, Hisar, Rohtak, Gurgaon and Jind district of Haryana and Delhi and Western Uttar Pradesh. The Murrah buffalo is a good milk producer. The bulls of Murrah are extensively used to upgrade the non-descript buffalo stock. Murrah buffaloes are originated in India and distributed in Azerbaijan, Brazil, Colombia, China, Ecuador, Guatemala, Indonesia, Laos, Malaysia, Nepal, Philippines, Sri Lanka, Vietnam and Venezuela.

Farmers can use the Buffaloes for various uses:

1. **Milk Production:** Buffaloes are renowned for their high milk production. Their milk is rich in fat and protein, making it highly nutritious. Many dairy farmers prefer buffaloes over cows for milk production, especially in regions where buffaloes are native or well-adapted. This is the major livestock which will be helpful to the people who owned the buffaloes for their use.
2. **Adaptability:** Buffaloes are well-suited to diverse environments and climates, ranging from tropical to temperate regions. They can thrive in areas where other livestock might struggle, such as marshy or swampy areas.
3. **Draught Power:** In addition to milk production, buffaloes are also used as draught animals. They can be employed for plowing fields, pulling carts, and other agricultural tasks. Their strength and endurance make them valuable assets for farmers, particularly in regions where mechanized farming equipment is not widely available or affordable.
4. **Manure Production:** Buffaloes produce significant amounts of manure, which is a valuable source of organic fertilizer for crop farming. Their manure is rich in nutrients and can improve soil fertility and structure, thus enhancing crop yields.
5. **Economic Importance:** Buffaloes represent an important source of income for many farmers. Apart from selling milk, farmers can also sell surplus animals for meat or use them for breeding purposes to improve their livestock herd's quality.